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NONPOINT SOURCE MANAGEMENT PRIORITIZATION

EPA, beginning with their 1987 guidance to states for preparation of the 1988 state water quality assessments [305(b) reports] has outlined NPS pollution categories and subcategories the states are required to address. Table 1, which follows, lists the current categorization according to the USEPA Grant Reporting and Tracking System. As required, Missouri's NPSMP designates the categories and waterbodies of highest priority in the state. The individual category narratives (Appendix E) characterize the impact of that NPS category, denote any regulatory authorities existing and suggest recommended changes, if needed.

PRIORITY POLLUTANT CATEGORIES

1. Agricultural Nonpoint Sources

The agriculture industry is one of the state's largest industries. Land in farms makes up 28.5 million acres or 65 percent of the state with about 16 million acres of that either harvested or pastured land (Bureau of the Census, 1994). Given the relative scale of the activity, the potential for NPS pollution places agricultural operations at the top of the priority ranking, as determined by category of pollutant. Within that category, sediment, fertilizer, pesticides and animal waste are the primary pollutants.

Implementation of watershed projects addressing agricultural pollutants generally will receive preference in receipt of financial and technical assistance. Projects that address regional issues and extend across watershed boundaries will also be used to provide information and education sessions, demonstrations of pollutant management technologies and technical assistance.

Sediment and soil erosion are the primary sources of NPS pollutants in Missouri streams. The state has an agricultural soil erosion prevention program to address this pollutant. It is successfully funded by one-half the proceeds of a 1/10 of one percent sales tax. Local project sponsors are encouraged to couple their soil erosion practices and monies with other NPS practices and dollars to achieve comprehensive treatment and improved water quality.

2. Urban Nonpoint Sources

Urban nonpoint sources are a major concern as urban areas continue to expand at increasing rates. Urban nonpoint sources have had a significant negative influence on water quality. Sediment is the primary contaminant, and severe water quality impacts also stem from the modification of storm flow regimes and the loss of aquatic habitat.

Table 1

NPS Categories & Subcategories

- Agriculture
  - Non-irrigated Crop Production
  - Irrigated Crop Production
  - Stream Bank Erosion
  - Range Land
  - Feedlots - All Types
  - Aquaculture
  - Animal Holding/Management Areas
  - Other
- Urban Runoff
  - Residential
  - Industrial
  - Commercial
  - Open Space
  - Other
- Silviculture
  - Harvest, Reforestation, Residue Mgmt.
  - Forest Management
  - Road Construction/Maintenance
  - Other
- Construction
  - Highways, Roads, Bridges
  - Land Development
  - Other
- Resource Extraction
  - Surface Mining
  - Subsurface Mining
  - Placer Mining
  - Dredge Mining
  - Petroleum Activities
  - Mill Tailings
  - Mine Tailings
  - Sand/Gravel Mining
  - Other
- Stowage and Land Disposal
  - Sludge
  - Wastewater
  - Landfills
  - Industrial Land Treatment
  - On-site Wastewater Systems
  - Hazardous Waste
  - Other
- Hydrologic Modification
  - Channelization
  - Dredging
  - Dam Construction
  - Flow Regulation/Modification
  - Bridge Construction
  - Riparian Area Degradation
  - Streambank
- Modification/Destabilization
  - Other
- Other
  - Atmospheric Deposition
  - Waste Storage/Storage Tank Leaks
  - Highway Maintenance/Runoff
  - Spills
  - In-place Contaminants
  - Natural
  - Septic Tanks
  - Recreation
  - Other
  - Source Unknown

Source: USEPA Grant Reporting and Tracking System, 1997.

Good quality proposals addressing urban NPS pollution will be considered a second priority for receipt of 319 grants provided the focus is on alternative or innovative stormwater management in settings not required to have a NPDES permit. Practices in new or developing areas or retrofits within existing areas which retain or slow runoff are preferred, for example innovative uses of swales, "rain gardens," wetlands or pervious surfaces. Enhancement of riparian corridors will also be eligible. Urban proposals should have a strong demonstration and technology transfer component and/or restoration component.

3. Acid Mine Drainage from Abandoned Coal Mined Lands

These sites are primarily historical in origin. The presently operating mines are regulated to the point that contaminants are controlled through permits. Abandoned mined lands contribute localized chronic impairments and episodic impacts to Missouri's water bodies. The primary contaminants are acidity and sulfate. The scale of many sites is too large to be addressed through NPS funding, although smaller treatable sites may be considered. Additional sources would be required to address the universe of these problem areas.

PRIORITY WATERS

1. Waters on the 303(d) List

Section 303(d) of the 1972 federal Water Pollution Control Act (as amended) requires states to develop a list of waters that do not meet water quality standards and thus require additional pollution controls. These waters are referred to as "water quality limited" (WQL) and must be periodically identified by the state agency designated with this responsibility. In Missouri, DNR is the designated state agency. This list (Appendix F), the development of which includes public participation, must be approved by EPA every two years.

The 303(d) process also requires a strategy for bringing those waterbodies back into compliance, that is, improving water quality to the point where recognized beneficial uses of the water are fully supported, within a reasonable period of time. The primary strategy is the development of Total Maximum Daily Loads (TMDLs). The development of a TMDL addresses pollution problems by systematically identifying the water contaminants causing the water quality impairment, linking them to watershed characteristics and management practices, establishing objectives for water quality improvement, and identifying and implementing new or altered management measures designed to achieve those objectives.

Waters on the 303(d) list, which are impacted by nonpoint sources, are the highest priority for implementation of comprehensive watershed projects and restoration activities. These projects are expected to improve water quality, particularly those with action plans that include all the components necessary for approval as voluntary TMDLs. (See the "TMDLs and the 303(d) List" section for action plan requirements.)

2. Prevention of Degradation of High Quality Waters

Waters designated "Outstanding National or State Resource Waters" in need of protection from degradation will follow as second priority. The same will be said for cool or cold water fisheries, or other high quality waters for which strong antidegradation requirements apply. Listings for Outstanding National Resource Waters (10 CSR 20-7, Table D), Outstanding State

Resource Waters (10 CSR 20-7, Table E), Streams Designated for Cold-Water Sport Fishery (10 CSR 20-7, Table C), and streams designated for cool water fishery in Stream Classifications and Use Designations (10 CSR 20-7, Table H) may be found in Appendix G.

3. Waters Almost Meeting Criteria for Inclusion on the 303(d) List

Third priority water bodies will be those waters that are close to meeting the criteria for being placed on the 303(d) list as impacted by NPS pollutants, but have not yet attained that status. For example this would include public drinking water reservoirs approaching an exceedence of the 3 ug/l atrazine limit. (See Appendix H.)

WATERSHED PRIORITIZATION

Missouri has historically used an NPS watershed ranking distinguished between ranking watersheds as to degree of problem and prioritizing them for treatment. The ranking process is a judgement as to the relative NPS pollution problem in the watershed, while the prioritizing takes into account not only the degree of NPS problem but economic, political, institutional and public participation constraints.

For the purposes of that ranking, Missouri recognized three types of NPS pollution problems, listed here in order of descending importance: human health, drinking water supply/non-health related; and protection of aquatic life.

As part of the Clean Water Action Plan in 1998, all states were required by the federal government to develop Unified Watershed Assessments, Restoration Priorities and Restoration Action Strategies. State, federal, tribal and local governments were asked to work with stakeholders and interested citizens to: (1) identify watersheds with the most critical water quality problems, and (2) work together to focus resources and implement effective strategies to solve these problems. A copy of Missouri's Unified Watershed Assessment (UWA) can be found on the Internet at {http://www.cares.missouri.edu/mowiap/} or may be obtained by contacting DNR or the Natural Resources Conservation Service in Missouri.

The framework for developing the UWA specified that states use an 8-digit hydrological classification unit. Missouri's 66 8-digit hydrological units (HU) were evaluated to determine those most in need of restoration. These were designated as Category I watersheds. The 56 Category I watersheds were evaluated using a numerical ranking system involving 21 criteria. These 21 criteria were selected because statewide data was available at the 8-digit level, and the information they represent is pertinent to the ranking. Watersheds were then ranked by their scores from high to low.

The Clean Water Action Plan provides that a significant part of any new funding requested by the president for fiscal year 1999 and beyond be targeted to restoration of those watersheds identified as not meeting clean water and other natural resource goals. The plan calls for states and tribes to develop Watershed Restoration Action Strategies for these watersheds, which could include, for example: priority and schedule for detailed assessments; review of clean water and other goals; development of a TMDL for pollutants exceeding state water quality standards; identification of sources; identification of natural resources that could be enhanced; schedule for implementation; identification of needed monitoring and evaluation; identification of lead

agency; funding plans; and process for public involvement.

The Missouri Unified Watershed Steering Committee members provided their top five watersheds for restoration in fiscal years 1999 and 2000. These individual listings factored in the final watershed assessment ranking along with: program information regarding projects scheduled for planning and/or funding through Section 319 of the Clean Water Act, proposed EQIP priority areas, locally led watershed planning initiatives, recent concerns related to public drinking water, agency priorities and other known opportunities for technical and/or financial success. Priority watersheds for 1999 are:

James River Basin
Spring River Basin
South Grand River Basin
Sac River Basin
Lower Salt River Basin

For 2000, the priority watersheds are:

Maries Des Cygnes River Basin
Upper Osage River Basin
North Salt River Basin
Upper St. Francis Basin
Little Chariton River Basin

The use of the 8-digit HU level creates significant challenges to the use of the UWA as a prioritization tool. It is difficult and often impractical to develop locally led, well-designed watershed projects addressing the entire HU. Within any of the priority 8-digit watersheds, there are sub-watersheds that would not be considered a high priority if this evaluation had been conducted at an 11- or 14-digit level. For this reason, Missouri has elected to use the 303(d) list as the primary prioritization tool. To the extent practical, the UWA will be used as a second prioritization tool, with the recognition that projects addressing watersheds at smaller than the 8-digit level area appropriate. It is expected that the UWA will be refined in future years and may then be more appropriately used as a primary ranking tool.

NONPOINT SOURCE FOCUS AREAS

In order to be fully effective, a NPS management program must present a balanced, broad-ranging approach to pollution prevention. It must emphasize a watershed management approach and be well integrated with other important programs to protect and restore water quality. These include point source, groundwater, drinking water, clean lakes, wetlands protection, soil conservation, pesticide management and other natural resource and environmental management programs. The program must also include statewide or regional information and education efforts as well as demonstrations of innovative solutions to new or long-standing problems. States have been given the flexibility to design programs best suited for their needs.

Missouri's approach is one of voluntary pollutant prevention and control in implementing NPS projects. It will support community-based, locally led, watershed-defined water quality projects. In waters impaired due to NPS pollution, it will support formal but voluntary TMDL development for the highest priority waters and work with local communities to assist their leadership in implementing comprehensive watershed management. In unimpaired waters, it will support community-based, locally led, watershed-defined water quality projects pursuant to items 2. and 3. of the section on Priority Waters.

The federal Clean Water Action Plan directed states to focus substantial effort on the restoration of impaired waters. Incremental grant funds pursuant to Section 319 of the Clean Water Act are to be provided to help states, territories and their partners implement Watershed Restoration Action Strategies for watersheds identified in Unified Watershed Assessments. Within the existing grant framework, incremental funds under Section 319 are to be focused upon implementing Watershed Restoration Action Strategies in areas identified by Missouri's Unified Watershed Assessments as being in need of restoration. These areas, referred to as "Category I" watersheds, are defined as those watersheds that do not now meet, or face imminent threat of not meeting, clean water and other natural resource goals. For the use of incremental 319 grant funding in FY2000 and in the future, Missouri will emphasize restoration of the highest priority watersheds identified in the UWA as needing to be addressed in fiscal years 1999 and 2000 and as revised in future years.